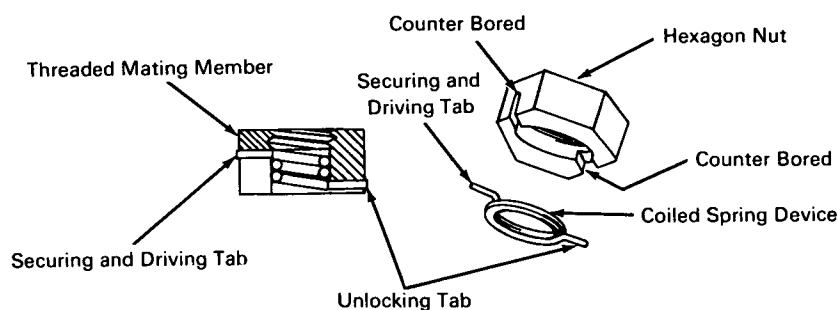


NASA TECH BRIEF



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Coiled Spring Makes Self-Locking Device for Threaded Fasteners



The problem: To ensure that screw-threaded fasteners remain securely attached to their mating members. Previous methods involved a safety wire through drilled components, a somewhat cumbersome method that is liable to operational breaks during installation or maintenance.

The solution: A coiled spring device that grips the threads of one of the screw-threaded members when the fastener is turned in one direction and releases when the fastener is turned in the opposite direction.

How it's done: The coiled spring is made with tab-like ends at opposite sides. The device fits into the counterbore of the hexagon nut and is held by the securing and driving tab. As the nut is threaded onto the mating member, the resulting frictional forces tend to open the coils and the parts are easily assembled. Conversely, a force tending to unscrew the nut will cause the coils to constrict on the mating member thread so that the nut cannot be loosened without

shearing the securing and driving tab. To remove the nut, force is exerted against the unlocking tab, the coils open and the nut rotates freely off its mating member.

Notes:

1. This lock would be very useful where positive fastening is required but easy disassembly is needed for maintenance.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
P.O. Box 1537
Houston, Texas, 77001
Reference: B65-10135

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: North American Aviation
under contract to Manned Spacecraft Center
(MSC-149)

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